

Sustainability of Professional Pharmacy Services in Community Pharmacy.

Thesis

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Doctor of Philosophy
Graduate School of Health, Discipline of Pharmacy:
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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Carmen Crespo Gonzalez, declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Graduate School of Health at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abstract

Background: Businesses have had to evolve through the development of innovations to respond to competitive markets. In the healthcare area, these innovations have been designed with the objective of improving patients' quality of life and safety. Specifically, in Pharmacy, the role of community pharmacists has significantly changed from a product to a patient orientation. As a result, multiple innovations referred to as professional pharmacy services have been designed, evaluated and implemented in practice. Nevertheless, once these innovations have been incorporated into practice, there is a paucity of evidence on how to maintain and make these services sustainable.

Objectives: This thesis covers the exploration, analysis and development of knowledge of the sustainability of professional pharmacy services. This research aims to fill a gap in the literature. The beliefs, perceptions and experiences of key stakeholders were explored to add their views on theories and knowledge acquired from the literature.

Methods: Qualitative and quantitative methods were used. This thesis encompassed four phases which included: (1) A literature review to explore definitions of sustainability in health services research and to develop a specific definition for the sustainability of professional pharmacy services. (2) A systematic review to identify the different conceptual approaches and assessment tools for the sustainability of innovations in healthcare. These data were used to develop a framework for the sustainability of professional services in pharmacy. (3) A qualitative study to explore community pharmacists' experiences and perspectives on the sustainability of professional services and to assess the applicability of the developed sustainability framework in practice. (4) A mixed-methods study to identify patients' needs and align them with the professional services provided by community pharmacists in Australia.

Results: Twenty-nine sustainability and twenty-three implementations definitions were identified in the literature review. The concepts retrieved from these definitions allowed the development of a specific definition for the sustainability of professional pharmacy services. One hundred thirty-two studies describing a sustainability conceptual approach or an assessment tool were identified in the systematic review. Factors affecting the sustainability of professional pharmacy services were identified, including funding, government support, adaptation, or program evaluation amongst others. From the results of this review a framework for the sustainability of professional pharmacy services was proposed. Eighteen interviews with community pharmacists were conducted as part of the qualitative study. The applicability of the framework for the sustainability of professional services was explored. The relevance of remuneration, training, government support as factors moderating the sustainability of professional services was reinforced. Additional moderating factors such as service promotion, government recognition or the need for making "patients feel comfortable" were also identified. In the last piece of research, 26 anonymous surveys were conducted with patients and pharmacy owners. Patients' needs (e.g. receiving information about their medication and management of their health condition) and the services most frequently provided by community pharmacists (MedsCheck, Monitoring and Screening services) were identified. These needs and services were aligned and the most suitable services to respond to patients' needs were identified (i.e. Tailored counselling, MedsCheck and Home Medicines Review)

Conclusion: The theoretical exploration of sustainability has revealed inconsistency on the terms and approaches available in the scientific literature. The resulting definition and proposed framework should be used as a guide to achieve the sustainability of professional services in pharmacy. The identified sustainability factors may serve as a guide for the development of future tools to measure the sustainability of these innovations in practice. Identifying patients' expressed needs should be a priority for community pharmacists who are willing to achieve the sustainability of their professional services.

Dissemination of Research

Peer reviewed publications

1. **Crespo-Gonzalez, C.,** Garcia-Cardenas, V., Benrimoj, S.I. 2017, 'The next phase in professional services research: From implementation to sustainability', *Res Social Adm Pharm.* 2017;13(5):896-901.
2. **Crespo-Gonzalez, C.,** Benrimoj, S.I., Scerri, M., Garcia-Cardenas, V. 2020, 'Sustainability of innovations in healthcare: a systematic review and conceptual framework for professional pharmacy services', *Res Social Adm Pharm.* 2020;16(10):1331-1343.
3. **Crespo-Gonzalez, C.,** Benrimoj S.I. , Scerri, M., Garcia-Cardenas, V. 2020, 'Community pharmacists' perspectives about the sustainability of professional pharmacy services: A qualitative study', *J Am Pharm Assoc (2003)*. (Submitted-Responded to Editors and Reviewers' comments)

Research papers under review

1. **Crespo-Gonzalez, C.,** Benrimoj, S.I., Scerri, M., Garcia-Cardenas, V. 2020, 'Exploring patients' needs to achieve the sustainability of professional pharmacy services in Australia: A mixed-methods study'. (Submitted to "International Journal of Clinical Pharmacy")

Conference proceedings

1. **Crespo-Gonzalez, C.,** Garcia-Cardenas, V., Benrimoj, S.I. 2017, 'Conceptual approach to research and incorporation of services into community pharmacy', International Pharmaceutical Federation, International congress, Seoul, Korea, 2017
2. **Crespo-Gonzalez, C.,** Garcia-Cardenas, V., Benrimoj, S.I. 2018, 'Revisión sistemática de las herramientas para medir sostenibilidad de los servicios asistenciales de salud', SIMPODADER internacional congress in Granada, Spain, 2018

3. **Crespo-Gonzalez, C.**, Garcia-Cardenas, V., Benrimoj, S.I. 2018, 'Conceptual approaches to the sustainability of healthcare services and their application to pharmacy', 1st International conference pharmacy practice research (BPSPPR Conference).

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Preface

This thesis is presented in fulfilment of the doctoral degree (Doctor of Philosophy) requirements of the University of Technology Sydney, Australia.

The thesis is structured as a PhD by compilation. Chapter 1 includes an outline of the overall rationale, organisation and the objectives of the thesis. Chapter 2 covers the background of the thesis. Chapters 3-6 contain the results, which have been structured as research articles containing corresponding references, figures, tables and appendices related to the piece of research. Chapter 3 and 4 have been published, and a copy of the paper is included. Papers included as Chapters 5 and 6 are currently under review by a journal and the version provided in this dissertation is the same as that submitted to the journal.

Chapters 3-4 present an overview of the existing evidence on the topic of interest. A proposed definition (Chapter 3) and a framework (Chapter 4) for the sustainability of professional pharmacy services are included. Chapters 5-6 contain a qualitative exploration of the topic. Chapter 7, which discusses the results of each piece of research, summarises the contribution of the work and provides recommendations for future research.

Carmen Crespo Gonzalez is the primary author of each publication. Co-authors contributed to the conception, design of the work, data collection, data analysis, interpretation or critical revision of the manuscripts.

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Abbreviations

ACA	Australian Customers' Association
ACT	Australian Capital Territory
A.I.	Absolute importance
ATSIPSS	Aboriginal and Torres Strait Islander Pharmacy Scholarship Scheme
ACCHOs	Aboriginal Community Controlled Health Organisations
BP	Blood Pressure
CPE	Continuing Professional Education
CPA	Community Pharmacy Agreement
DAAs	Dose Administration Aids
GP	General Practitioner
HMR	Home Medication Reviews
HoQ	House of Quality
KTA	Knowledge to Action
PARiHS	Promoting Action on Research Implementation in Health Services
QFD	Quality Function Deployment
QLD	Queensland
QUM	Quality Use of Medicines
QUMAX	Quality Use of Medicines Maximised
MBS	Medicare Benefits Schedule
NT	Northern Territory
NSW	New South Wales
OTC	Over-the-counter
OSA	Obstructive Sleep Apnoea
PBS	Pharmaceutical Benefits Scheme

Pn	Patients' need
PO	Pharmacy Owner
PM	Pharmacy Manager
PP	Pharmacist Provider
RE-AIM	Reach, Effectiveness, Adoption, Implementation and Maintenance
RITA	Rural Intern Training Allowance
SA	South Australia
TAS	Tasmania
TBL	Triple Bottom Line
VIC	Victoria
VoC	Voice of the costumer
WA	Western Australia
WHO	World Health Organisation

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